

*Application No. 09/863,406*  
*Reply dated November 13, 2007*  
*Reply to Office Action dated May 14, 2007*

*Docket No. 1291-0183P*  
*Art Unit: 3743*  
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**AMENDMENTS TO THE DRAWINGS**

The Applicants have attached two sheets of Replacement Drawings (FIGS. 2a, 2b, and 2c).

**REMARKS**

The Applicants thank the Examiner for the thorough consideration given the present application. Claims 32-66 are currently being prosecuted. Claims 32, 57 and 66 have been amended. Claims 36-56 and claims 61-63 have been withdrawn. The Examiner is respectfully requested to reconsider his rejections in view of the amendments and remarks as set forth hereinbelow.

**Objection to the Drawings**

In response to the Examiner's objection to the drawings, the Applicants have attached two sheets of Replacement Drawings (FIGS. 2a, 2b, and 2c). These FIGS. Have been added merely to provide proper antecedent basis for the subject matter set forth in claim 32.

No new matter has been added. Accordingly, reconsideration and withdrawal of this objection are respectfully requested.

**Amendments to the Specification**

The specification has been amended to provide proper antecedent basis for Figs. 2a-2c.

**Rejection Under 35 U.S.C. § 112, second paragraph**

Claims 32-35 stand rejected under 35 U.S.C. § 112, second paragraph. This rejection is respectfully traversed.

Regarding rejected claim 32, the Examiner is directed to the Replacements Sheets of the Drawings (FIGS. 2a, 2b, and 2c), which properly illustrate "heat transport enhancing

structures in the substance layers and connected to the inner surfaces of the at least partly heat conducting walls or plates to make heat conduction through the substance layers and transport of vapor of the sorbate in the substance layers have substantially the same direction", as set forth in claim 32 as originally filed.

Regarding rejected claim 35, the Applicants believe that the Examiner is referring to claim 32. In response, the Applicants have amended the third line from the end of claim 32 to replace "inner surface" with "second surface".

Regarding rejected claim 66, the Applicants have amended claim 66, line 1 to delete "active solid".

At least for the reasons described above, the Applicants respectfully submit that the claims, as amended, particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Accordingly, independent claim 32, and the claims depending therefrom are in condition for allowance.

**Rejection Under 35 U.S.C. §103(a)**

Claims 57-60 and 64-65 stand rejected under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Foulke (U.S. 4,146,013). This rejection is respectfully traversed.

In contrast to the independent claim 57 of the present invention, Foulke merely discloses a substance interacting with a liquid sorbate and thus uses phase transitions that are different from those set forth in the claims of the present invention. Hence, the disclosure of

Foulke is related to another process and cannot be used in combination to anticipate the invention as defined in independent claim 57.

In particular, Foulke (U.S. 4,146,013) merely discloses a solution heat pump, which means that the active substance used all the time is in a dissolved state and hence in a solution or liquid state. In such solution heat pumps there are quite different problems encountered, e.g. in regard of heat exchanging and heat conducting properties, than in heat pumps using an active substance that all the time remains liquid. Therefore, it cannot be easily said or could be obvious that the solution heat pump disclosed in Foulke is in the same field of endeavour as the AAPA cited in the Action.

Furthermore, in Foulke at least thirty one (31) substances suitable for a solution heat pump are mentioned: (col. 3, lines 41 - 49:)

lithium iodide  
potassium hydrate  
chromium chloride  
calcium iodide  
calcium chloride  
aluminum chloride  
aluminum bromide  
magnesium bromide  
magnesium chloride  
magnesium iodide  
manganese chloride

manganese sulfate

chromium tetrochloride

chromium trichloride

triethylamine

diperidine

ethyl acetate

diisobutyl amine

cyclohexanol

calcium benzoate

allyl amine

allyl alcohol

acetone

acetic acid

(more in Table 1:)

aluminum iodide

antimony penta chloride

calcium bromide

cobalt chloride

copper sulfate

amyl amine

diiso butylamine

In addition to the thirty one (31) possible substances are mentioned in Ffoulke, in the other documents cited by the Examiner, the solution heat pumps even more substances that could possibly be used are disclosed.

Hence, the Applicants respectfully submit that

- (I) it is not reasonable to combine the teachings of suitable substances for solution heat pumps with the choice of suitable active substances for a heat pump in which the substance remains in a solid state all the time, and
- (II) even if combined, there would no reasonable way for one skilled in the art at the time the present invention was made to select suitable substances fulfilling the definitions of independent claim 57 due to the vast number of known substances, and therefrom, arrive the specific combination of elements directed to a chemical heat pump including an active solid substance and a sorbate, as set forth in independent claim 57.

At least for the reasons described above, the Applicants respectfully submit that the combination of elements as set forth in independent claim 57 is not disclosed or made obvious by the prior art of record, including AAPA and Foulke. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Independent claims 57 and the claims depending therefrom are in condition for allowance. In particular, since independent claim 57 is generic and clearly involves an inventive step, claims 61 - 63 should be allowed to be rejoined.

**CONCLUSION**

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 208-4030 (Direct Line).

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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JMS/CTT/ktp 

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Attachment: Two sheets of Replacement Drawings (Figs. 2a, 2b, 2c)